ABSTRACT OF THE DISCLOSURE

A tyre for a two-wheeled vehicle includes a carcass structure, a belt structure, a tread band, and a pair of sidewalls. The carcass structure includes at least one carcass ply. Opposite lateral edges of the carcass structure are associated with respective bead wires. The belt structure is associated with at least one layer of a crosslinked elastomeric material. The elastomeric material includes at least one diene elastomeric polymer and at least one layered inorganic material comprising an individual layer thickness from 0.01 nm to 30 nm. A process for producing the tyre includes manufacturing the tyre by assembling the at least one carcass ply, the belt structure, and a tread; associating the at least one layer of a crosslinkable elastomeric material with the belt structure; subjecting the tyre to moulding in a cavity formed in a vulcanization mould; and subjecting the tyre to crosslinking by heating.